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BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

Paper No. 34

Application Number: 09/115,229
Filing Date: July 14, 1998
Appellant(s): SCHEELEN ET AL.

Ms. Marina Schneller
For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed on November 26, 2003.

(1) Real Party in Interest

A statement identifying the real party in interest is contained in the brief

(2) Related Appeals and Interferences

A statement identifying the related appeals and interferences that will directly affect or be directly affected by or have a bearing on the decision in the pending appeal is contained in the brief. Appellants have indicated in the Brief that they are not aware of any related appeals or interferences.

(3) Status of Claims

The statement of the status of the claims contained in the brief is incorrect. A correct statement of the status of the claims is as follows:

Claim 8 was not addressed in the Brief, and has been canceled in "Amendment C" filed on January 11, 2001. Therefore, claims 1-25 have been canceled.

(4) Status of Amendments After Final

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

(5) Summary of Invention

The summary of invention contained in the brief is correct.

(6) Issues

The appellant's statement of the issues in the brief is correct. For clarification, the issues should read:

Are claims 26-31 and 33-41 on appeal unpatentable under 35 USC 103(a) over Jenkins et al. (US patent No. 5049411)?

Are claims 26-41 on appeal unpatentable under 35 USC 103(a) over Wooster et al. (US Patent No. 5,631,069)?

(7) Grouping of Claims

Appellant's brief includes a statement that claims 35,36,39,40 and 28,38 do not stand or fall together and provides reasons as set forth in 37 CFR 1.192(c)(7) and (c)(8).

(8) Claims Appealed

The copy of the appealed claims contained in the Appendix to the brief is correct.

(9) Prior Art of Record

5,049,411	Jenkins et al.	9-1991
5,631,069	Wooster et al.	5-1997

(10) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

Withdrawn Rejections

(I). The rejection of claims 33 and 39 under 35 USC 112, second paragraph, as being indefinite, has been withdrawn in view of Appellant's amendment to claims 33 and 39, wherein the word "composition" has been deleted and the word "article" added in its place.

(II). Claims 26-31 and 33-41 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jenkins et al. (5,049,411).

Jenkins et al. teaches a high density polyethylene (HDPE) composition comprising from about 50 to about 95 weight percent of HDPE and from about 1 to about 30 weight percent of a filler which may be talc (Abstract). The term high density generally refers to densities in the range of about 0.94 to 0.965 g/cm^3. The term polyethylene as used herein includes homopolymers of ethylene and copolymers of at least about 85 weight percent ethylene with up to about 15 weight percent of one or more C_3 to C_{10} alpha-olefins, such as 1-butene, 1-hexene, etc. Preferably the copolymers include from about 0.1 to about 3 weight percent of the alpha-olefin comonomer (column 1, lines 56-66). The talc is employed as a filler in the composition. In particular when used with HDPE the talc is preferably in the form of particles of a size in the range of about 0.5 to 50 microns. The talc is employed in amounts ranging from about 1 to about 30 weight percent. Jenkins et al. further teach shaping of the composition into an article such as a packaging material, or an envelope (column 1, lines 32-36). The composition is formed into a *seamless* tube by extrusion and then later formed into an envelope (column 2, line 50 to column 3, line 10).

Since Jenkins et al. teaches that which appears to be identical to that recited in the present claims, with respect to HDPE, it is the Examiner's position that the recited melt flow would be inherent. The recited particle size distribution between 0.2 and 15 microns, and mean particle size between 1 and 5 microns would be well within the disclosed particle size range taught by Jenkins et al.

Since Jenkins et al. teach talc merely used as a filler, it would have been obvious to one having ordinary skill in the art to have used less filler if e.g. manufacturing costs were not an

issue. Since Jenkins et al. teaches talc having a lower end range of 1%, the Examiner would like to note that only a very slight decrease in the weight % of talc would fall within the presently claimed range, i.e. .94 wt%, .95 wt%, etc.

The recited "talc is added in an amount effective to increase a creep resistance of said article" and "wherein the composition is characterized by creep resistance (t), wherein t=creep resistance expressed in terms of time to fracture, measure according to ISO Standard 1167 (1996) at 20 °C on a pipe having a diameter of 50 mm and a thickness of 3 mm and under a circumferential stress of 12.4", would be met by the polyethylene composition made obvious by Jenkins et al.

(III). Claims 26-41 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wooster et al. (5,631,069).

Wooster et al. teaches a polyethylene composition used to mold articles. The molded material is comprised of high molecular weight linear polyethylene and a substantially linear ethylene/ -olefin interpolymer. The material has a density in the range of about 0.923 to about 0.95 g/cm3 and has excellent impact resistance (Abstract). The polyethylene material can be molded into articles, such as pipes, tubes, or molded parts (column 1, lines 23-31). The molded material can be made produced from blends of a) high molecular weight high density polyethylene (HDPE) and b) linear low density polyethylene (LLDPE), VLDPE, etc. (column 4, lines 1-11).

Both HDPE and LLDPE are prepared in a similar manner where ethylene is copolymerized with an -olefin such as butene or hexene (column 4, lines 47-62). Although not generally required the molded material can also contain additives to enhance antiblocking and

coefficient of friction characteristics including talc (column 14, lines 13-29). The molded polyethylene material can be produced by known processes, for example by casting processes, compression molding, or preferably, by extrusion (column 13, lines 45-48). Although not expressly taught, it is the Examiner's position that the teaching of injection molding is a well known and conventional process for making pipes, and would have been an obvious method for making the disclosed articles.

Since Wooster et al. teaches that it is known to include additives, such as talc, in molded polyethylene compositions, it would have been obvious to one having ordinary skill in the art to have included the talc in an effective amount to have imparted antiblocking and coefficient of friction characteristics. The determination of such amount of talc to impart such properties is deemed to be routine optimization and well within the level of skill of the ordinary artisan. Furthermore, it would have been obvious to one having ordinary skill in the art to have used more or less of the talc additive if manufacturing costs were of an issue.

Although Wooster et al. specifically fails to teach the molding of pipe couplings from the polyethylene composition, pipe couplings are *prima facie* obvious over the teaching of pipe. Pipes and couplings are designed to work in the same system, and a pipe may well be used as a coupling, i.e. if it is used as an intermediate between two pipes it has "coupled" the two pipes.

Since Wooster et al. teaches that which appears to be identical to that recited in the present claims, with respect to the presently claimed polyethylene, it is the Examiner's position that the recited melt flow would be inherent. The recited particle size distribution would be within the claimed range.

The recited "talc is added in an amount effective to increase a creep resistance of said article" and "wherein the composition is characterized by creep resistance (t), wherein t=creep resistance expressed in terms of time to fracture, measure according to ISO Standard 1167

(1996) at 20 C on a pipe having a diameter of 50 mm and a thickness of 3 mm and under a circumferential stress of 12.4" would be met by the polyethylene composition made obvious by Wooster et al.

Allowable Subject Matter

(IV). The examiner would be willing to allow claims directed to the following recited subject matter:

The prior art of record fails to teach or suggest an article of manufacture selected from the group consisting of a pipe and a pipe coupling comprising a polyethylene-based composition wherein the polyethylene exhibits a standard density, measured at 23 °C according to ASTM Standard D 972, of greater than 940 kg/m^3 and wherein the polyethylene-based composition comprise talc in an amount of .1 part per 100 parts by weight of polyethylene to provide creep resistance.

(11) Response to Arguments

Jenkins Reference

In response to Appellant's arguments regarding the Jenkins reference, Jenkins et al. specifically teaches forming a *seamless* tube by extrusion and then later formed into an envelope (column 2, line 50 to column 3, line 10). Given the limited structure recited in the present claims, it is the Examiner's position that the claimed structure of a pipe has been met.

Although Appellant argues that the low end of talc disclosed by the reference would include 1.05 part of talc per 100 parts of HDPE, it remains to be the Examiner's position that since Jenkins teaches the use of talc merely as a filler, it would have been obvious to one having

ordinary skill in the art to have used more or less filler, if manufacturing costs were/were not of an issue.

Wooster Reference

With respect to Applicant's arguments regarding the Wooster et al. reference, it is the Examiner's position that it would have been obvious to one having ordinary skill in the art to have included the talc in an effective amount to have imparted antiblocking and coefficient of friction characteristics. The determination of such amount of talc to impart such properties is deemed to be routine optimization and well within the level of skill of the ordinary artisan.

Declaration

In reconsidering Appellant's declaration of August 9, 2001 the Examiner finds the declaration to be much narrower in scope than that of the presently claimed invention. Firstly, Appellant uses a sample of 1 gram of talc to 989.9 g of polyethylene (Example I found on page 7 of the present specification)), and compares it to a sample that includes over 10 times that amount of talc. The new comparative example includes 10.5 g of talc to 980.4 g of polyethylene. Applicant appears to show unexpected results for .1 part of talc per almost 100 parts polyethylene (or $1/10^{th}$ of that of the new comparative example). The present claims recite "in an amount of less than 1 part per 100 parts by weight of polyethylene" which covers a much broader range than 0.1 part per 100 parts polyethylene, therefore, the declaration being much narrower in scope than the presently claimed invention. From this, Appellant has not clearly shown that the addition of less than 1 part per 100 by weight of talc has particular beneficial effects (over the entire range), as argued by Applicant.

Examiner's Conclusion

Both the Jenkins et al. and Wooster et al. references teach the use of talc in a polyethylene composition as an additive. Therefore, it remains to be the Examiner's position that it would have been obvious to one having ordinary skill in the art to have varied the amount of filler in the polyethylene composition. Furthermore, Appellant has not shown unexpected results over the entire claimed range (< 1 part per 100 parts by weight of polyethylene).

According to MPEP § 2144.05 (III. Rebuttal of Prima Facie Case of Obviousness), Applicants can rebut a prima facie case of obviousness based on overlapping ranges by showing the criticality of the claimed range. In such a situation, the Appellant must show that the particular range is critical, generally by showing that the claimed range achieves unexpected results relative to the prior art range." *In re Woodruff, 919 F.2d 1575, 16 USPQ2d 1934 (Fed. Cir. 1990).* Appellants have failed to show the criticality of the entire claimed range, to overcome the teachings of the applied prior art of record.

To establish unexpected results over a claimed range, Appellants should have compared a sufficient number of tests both inside and outside the claimed range to show the criticality of the claimed range. *In re Hill, 284 F.2d 955, 128 USPQ 197 (CCPA 1960).* See MPEP § 716.02(d) (Demonstrating Criticality of a Claimed Range). Appellants have only compared one specific point within the claimed range, and have failed to show the criticality of the entire claimed range.

In view of Appellants showing in the declaration filed on August 29, 2001 limited to .1 part of talc per ~100 parts polyethylene, the Examiner has indicated allowability of subject matter directed to this particular ratio of talc/polyethylene.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

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February 25, 2004

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